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## ABSTRACT

This study investigated whether a random sample of 50 elementary teachers, 10 in each of grades 2 through 6, in Topeka, Kansas, discriminated against elementary school boys--and in favor of girls--in rating of pupil reading achievement and assignment to reading groups. Teachers rated each pupil in their class on level of general reading achievement and classroom behavior. They also reported which reading group pupils were assigned to. Unknown to teachers, standardized test scores of reading comprehension from the regular schoolwide testing program were obtained from the central administrative office. Data were analyzed by comparative frequency distributions, intercorrelations, and multiple regression analysis. No sex bias was found either in assigning pupils to reading groups or in judging pupil reading achievement. A slight behavior bias was found on both reading group placement and teacher rating of pupil reading achievement. There was no convincing evidence of systematic, large-scale teacher bias on either criterion, overall or at any grade level, contrary to hypotheses. A bibliography is included. (Author/NH)

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AN INVESTIGATION OF SEX BIAS IN TEACHER ASSESSMENT  
OF READING ACHIEVEMENT OF ELEMENTARY SCHOOL PUPILS

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September 25, 1969

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## SUMMARY

This study investigated whether a random sample of 50 elementary teachers, 10 in each of grades 2-6, in a town of 150,000 discriminated against elementary school boys----and in favor of girls----in rating of pupil reading achievement and assignment to reading groups. Teachers rated each pupil in their class on (1) level of general reading achievement and (2) classroom behavior. They also reported which reading group pupils were assigned to. Unknown to teachers, standardized test scores of reading comprehension from the regular school-wide testing program were obtained from the central administrative office. Data were analyzed by comparative frequency distributions, intercorrelations, and multiple regression analysis. No sex bias was found either in assigning pupils to reading groups or in judging pupil reading achievement. A slight behavior bias was found on both reading group placement and teacher rating of pupil reading achievement. There was no convincing evidence of systematic, large-scale teacher bias on either criterion, overall or at any grade level contrary to hypotheses.

## CHAPTER I Background for the Study

### Introduction

As a result of several large-scale, nation-wide studies (10, 22, 24), it is generally believed that elementary school boys do not learn to read as well as do elementary school girls. Powell (19) stated that three hypotheses have been offered as explanations of this phenomenon. These are: the differential-rates-of-maturation theory, the evolutionary-based-differences theory, and the sex-identification theory.

Physically, boys mature less rapidly than do girls. As a group at age six, they lag as much as 12 months behind girls in small muscle coordination. Additionally, Bentzen (5) has pointed out that boys far outnumber girls in such divergent pathological conditions as fetal and neonatal death rates, speech handicaps, brain injury, blindness, and poor hearing. At the present time it is unclear exactly what educational implications these data have for the elementary school.

Evolutionally, Bannatyne (4) conjectures that men of greater visuo-spatial ability tended to survive and reproduce while those with lesser amounts of these traits did not. The spatially able tended to use both visual fields and both hemispheres of the brain in throwing spears, shooting arrows, etc. In contrast, the females who had the responsibility for raising the family, manipulated them primarily through communication and verbal skills. The verbally able tended to use the right half of the body, particularly the right visual field which is controlled by the left hemisphere. Thus, evolutionary changes have biased males toward greater interhemispheric dominance which has resulted in female superiority in verbal skills. There seems little that the elementary school can do to improve boys' reading achievement if this theory is valid and accounts for the major portion of the difference between the sexes in reading achievement.

Socially, the elementary school is a feminine institution. No disagreement exists on this point! (11, 16, 18, 20, 21) Not only is the elementary school dominated by women teachers, particularly in the primary grades, but Grambs and Waetjen (11) point out that, in effect, there is operative a requirement that students conform to female definitions of learning tasks and school behavior. And they point out that since this conformity is set by women, it inevitably follows feminine codes and values. And any student, boy or girl, suffers to the extent that they do not or cannot learn or behave the way women teachers say they should. Furthermore, the "All-American" boy is taught early by subtle and direct measures to disdain feminine activities. If he views school, and particularly reading, as feminine-oriented and sex-linked, it may be difficult for him to identify with school and the activities therein. Reading may thus become an inappropriate activity for some boys to engage in. And compounding the problem is the evidence that the grades



given by some women teachers are biased in favor of girls! (2) Of the three theories--and each may be a partial contributor to whatever difference may actually exist, only the last one presents variables which can fruitfully be manipulated by an experimenter. This study deals with one aspect of that theory.

### Review of the Literature and Related Research

There is quite a bit of evidence that teachers are subjective and biased in their assessment of pupils' achievement. Terman (25) concluded that some sort of "halo" effect operates in the classroom to give girls higher teacher ratings or grades than would be merited on the basis of objective achievement test results. Carter (8) demonstrated that such was the case with one set of secondary school mathematics teachers. He found that, even though the boys in the study had a higher mean level of achievement than did the girls, their teacher-assigned grades did not reflect this difference, and in fact, were considerably lower as a group than were the girls' grades. In addition, even though both men and women teachers gave higher grades to girls than to boys, women teachers were less objective in assigning grades than were the men teachers. Women teachers apparently considered factors other than achievement--neatness, promptness, behavior--in determining the final grade.

Caldwell and Hartnett (7) investigated this phenomenon at the university level in a study subtitled, "It Helps to Wear a Skirt". Using 167 sections of six lower division courses, they compared instructor grades with scores on common final examinations (over which instructors had no control). Of 24 comparisons, females received the advantage 18 times while males were favored six times. And Caldwell and Hartnett point out that the male advantages were small while most of the female advantages were large. Furthermore, when any two letter grade differences between instructor grade and examination grade were studied, proportionately far more females received a higher instructor grade, a difference significant at the .001 confidence level. (An interesting sidelight revealed by this study was that male instructors may tend to favor girls while female instructors favored boys.)

Arnold (2) found some evidence of this grading bias in the elementary school. In his study, teachers' grades were biased in favor of girls over boys.

Several studies have investigated teacher bias in the elementary school. McNeil (15) found that a group of kindergarten boys outperformed a group of girls in the task of learning printed words presented on a teaching machine. However, after four months of instruction in grade one (by female teachers), the girls scored higher on words taught by the teachers. Also, by questioning the pupils, it was found that boys were more likely to receive more negative teacher admonitions than were girls. A study by Slobodian and Campbell (23) replicated McNeil's study and although no differences were found between the sexes on the learning task, boys were again identified as receiving more negative teacher admonitions than girls.

In a survey of the most relevant research available on the topic of differential teacher interaction with boys and girls, the distinguished child psychologist, Pauline Sears (20) found that most studies showed that boys received significantly more disapproval or blame than the girls did. She hypothesized that one reason for this difference may be that boys are more outwardly aggressive in the classroom than are girls. But she also found that the types of behaviors for which boys received disapproval was different from that for which girls received disapproval. Girls generally received disapproval for lack of knowledge or skills, whereas boys were significantly less criticized for this deficiency but were much more highly criticized for violating rules than were girls. Recognizing that there are great differences within groups, Sears nevertheless concluded that in general, teachers interact differently with boys than with girls, that they have different bases for giving approval and disapproval for boys than for girls, and in assorted subtle ways express a persistent bias toward boys. Some male teachers may manifest the same attitudes.

In a recent monograph, another eminent child psychologist, Eleanor Maccoby (13), summarized some of the major differences between the sexes--and in the process, shed some light on why elementary school teachers may be biased. She found that little boys start more fights, make more noise, think more independently, and lag behind girls in hand-muscle control. On the other hand, girls are more dependent, submissive, conforming, unadventurous, and more sensitive to others' reactions.

Minuchin (16), as a result of studying four classrooms of middle-class, urban fourth graders in four different types of schools, concluded that girls may find it easier and more rewarding to relate to the teacher, to accept his authority, to fulfill an expectation of cooperative behavior while boys may find it difficult to learn from adults, that adult approval per se may be less important to them, and that adult authority may be harder to accept. These conclusions seem to corroborate and extend Maccoby's and the inescapable generalization seems to be that school is structured for girls to succeed and for boys to struggle.

Several studies have tried to ascertain the reasons for this bias and to determine how teachers react to the differences in behavior between the sexes. Battle (3) concluded that it was not sex alone which seemed to be the determining factor but rather that teachers expressed bias in favor of the pupil who tends to have a pattern of values similar to the teacher's idea. By inference then, little girls who behaved like little boys might be discriminated against by many women teachers. Thomas (26), in a study of 25 classrooms in Indiana, Illinois, and Michigan, reached almost identical conclusions. He concluded that teachers give the highest grades to children they like. The tendency prevailed regardless of intelligence and achievement test results among children and rested solely on whether students held values similar to their teachers.



Feldhusen, Thurston, and Benning (9) had public and parochial teachers from an entire county nominate 1109 third and sixth grade children as persistently displaying either socially approved or disapproved school behavior. From this pool, a random sample of 200 children were drawn for further study. When equated statistically for intelligence, the socially-approved children had significantly higher arithmetic and reading achievement than did children whose classroom behavior is socially disapproved. Integrating this finding with those by Battle and Thomas would indicate that it is not the socially disapproved behavior per se that results in lowered achievement but rather that children manifesting such behavior are disliked by teachers because it conflicts with their own value systems. This dislike may then tend to produce subtle discrimination and bias which may result in the inferior teaching of boys suggested by Manning (14).

This reasoning tends to jibe with the conclusions reached by Sexton. (21) Not only did she conclude that schools tend to be "feminine" institutions but she found that the less masculine boys appeared to be able to "hang-on" in the system, obey its rules, and meet its requirements. It was the more masculine boys for whom schools seemed particularly unsuited, those whose value systems are most divergent from teachers!

Two studies, one by Heilman (12) and one by Palardy (17), not only seem to substantiate the bias against boys present in elementary schools but give some indication that it can be recognized and surmounted. Heilman conducted an intensive in-service program on sex differences in learning to read for a group of first grade teachers. He then matched them with a control group in the same community who had not become acutely aware of these differences. The experimental group of teachers apparently made a number of teaching and other adjustments in the classroom because the boys taught by them had higher mean scores on each of the subtests of the Stanford Achievement Test at the end of grade one than did the boys taught by the control teachers. Apparently the experimental teachers recognized and corrected for their bias while the control teachers allowed it to operate unchecked.

Palardy matched on five variables five first grade teachers who thought that boys could learn to read as well as girls (Group A) and five who believed boys would be only 60 percent as successful as girls (Group B) and administered end-of-the-year tests to the pupils in these ten classes. Results were then analyzed by pupil sex and teacher belief in a 2 X 2 analysis of variance with pupils' intelligence quotient statistically controlled. The boys in Group B scored much lower than the pupils in the other three groups did (whose scores were quite similar). The combined effect of pupils' sex and teachers' belief resulted in a lower mean reading achievement for boys in Group B. The teachers' prophecy was thus fulfilled! The question is, why?

### Conclusions and Implications

This summary of research causes several points to stand out sharply. One is that American schools, particularly elementary, are feminine institutions, run by women, with standards set and maintained by women, in which girls feel more at home and achieve definitely more than boys. Another is that teachers of both sexes at all levels, elementary, secondary, and college, favor girls and discriminate against boys, particularly in assigning grades. A third is that this bias seems to be highly correlated with two interacting factors, the degree of pupil misbehavior and the discrepancy between the value systems of teacher and child. These factors seem generally to discriminate against boys and operate in favor of girls. Last, some evidence indicates that teachers may be able to recognize some of these problems and to overcome any bias against boys so that they achieve as well as do girls and better than boys in classrooms where favoritism remains unchanged.

But this review also indicates that we are quite ignorant in several areas. We don't know how bias, if it exists, influences teachers' decisions and behavior. There are two specific areas we are ignorant about. One, we don't know whether the fact that boys are more of a discipline problem in the classroom affects teacher perception of academic achievement, particularly reading. Can teachers make objective, unbiased assessments of reading achievement in spite of boys' classroom misbehavior or are their perceptions influenced by it? Neither do we know whether teachers express any existing prejudice in overt ways such as assigning misbehaving children to inappropriate level reading groups.

This study is designed to investigate the interaction of pupil misbehavior, teacher assessment of reading achievement, and teacher assignment to appropriate level reading group.

### Purpose and Hypotheses of the Study

This study is to investigate, in self-contained classrooms in grades two through six, the interrelationships among reading achievement, teacher rating of pupil reading comprehension, teacher perception of difficulty of pupil discipline, classroom grouping procedures, and sex of pupil. Hypotheses which will be investigated are:

1. Teacher ratings of level of pupil reading comprehension compared to results of standardized reading test will be sex-biased. I.e., teachers will rate girls as reading as well or better than the level shown by standardized test results while they will rate boys lower than the level shown by standardized test results.
2. Teacher ratings of level of pupil reading comprehension will be influenced by teacher perception of difficulty of pupil discipline. I.e., pupils rated as discipline problems will get teacher ratings which are lower than the

scores these pupils get on a standardized reading achievement test. Additionally, there will be a sex bias in favor of the girls. I.e., the teacher's rating of reading comprehension will be influenced more by pupil discipline problems if the ratee is a boy than if a girl.

3. Assignment to reading groups will be sex-biased. E.g., if a boy and a girl had identical scores on a standardized reading achievement test, there is a strong probability that they will be assigned to different reading groups, the girl being favored, the boy being discriminated against.
4. There will be no systematic differences on any of the above hypotheses on the following independent variables: grade level, sex of teacher, length of teaching experience.



## CHAPTER II Research Methodology

### Selection of Respondents

Fifty teachers, 10 each in grade 2, 3, 4, 5, and 6, were selected at random in cooperation with Topeka administrators to participate in the study. Grade 1 was omitted from the study since middle- or end-of-the-year standardized reading achievement tests, the independent variable, are not given in this grade. An alphabetical list of the 34 elementary schools in the Topeka system was made with five columns, one for each grade, 2, 3, 4, 5, and 6, to the right of the list of names. The first grade level selected was a second grade at Avondale East, the first school on the list; the second one was a third grade at Avondale Southwest, the second school on the list, etc. (Appendix A shows how this was done.) When the final, 34th, school had been designated as to what grade level the teacher in it should be, the first school on the list was returned to and the 35th grade level assignment was selected from the next highest grade. This procedure was followed until all 50 school-grade level assignments were determined. Eighteen schools were assigned one respondent; sixteen were assigned two. In no school were there two teachers at the same grade level.

The principals at each school were asked to pick by chance the teacher for each grade level participation. At a special meeting of all elementary principals, the investigator outlined the purposes and procedures of the study, distributed the rating scales, and asked for their cooperation. Each principal then selected, without the investigator's knowledge, one teacher from among those at the grade level assigned to his school to respond to the questionnaires. Principals were urged to do so randomly and by chance. The problems that could arise if they didn't do so were discussed with them. No teachers other than the respondents knew anything about the study.

All data was collected the last two weeks of February, 1969.

### Collection of Data

Since the study dealt primarily with the interaction among pupil behavior, teacher assessment of reading achievement, and assignment to reading group, a sample of 50 teachers in Topeka, Kansas, a town with a population of 150,000, was asked to give this information on each pupil in her class.

Two rating scales were developed by the investigator to be filled by the participating teachers, one on teacher assessment of pupil level of general reading achievement and the other on teacher rating of pupil behavior. (See Appendix B.) Each was a five-point scale with percentages suggested for each category so that ratings should approximately produce a bell-shaped distribution. Percentages suggested for each category, high to low were: 1 - 10%, 2 - 20%, 3 - 40%, 4 - 20%, 5 - 10%. In addition to these suggested percentages,

descriptions of each category were written by the investigator in collaboration with Topeka school administrators. Two sample descriptions were:

Upper 10%; reads rapidly, fluently, and comprehends well; level of reading is far beyond the average child of the same chronological age.

Lowest 10%; disruptive, unpredictable, and openly non-cooperative; seems to lack knowledge of accepted group norms; may even delight in flouting regulations; discipline is so difficult that child is sometimes referred to principal for correction.

Teachers were directed to compare each child to his peers rather than to his potential. Additionally, they were told that they were not bound by the suggested percentages in any way but, rather if their class deviated from normal in any significant way, they were to make sure their ratings reflected this.

Two other major items were collected on each child, assignment to reading group and grade equivalent score on the reading comprehension subtest of a standardized achievement test battery. In self-contained elementary school classrooms it is common to group pupils homogeneously for reading instruction. Teachers were asked to numerically indicate to which group each pupil was assigned, 1 being the highest group, 2 the next, etc.

The point of the study was to compare teacher ratings with an independent criterion, pupils' reading comprehension as measured by a standardized achievement test. For teacher ratings to be valid, the study had to be conducted at the middle or end of the year, after teachers had an opportunity to become thoroughly acquainted with each child in their classrooms. However, if teachers based their assessment of reading comprehension on standardized test results rather than personal observation, the hypotheses of the study would be jeopardized. For these reasons, the Topeka school system was chosen for study.

In Topeka, standardized achievement test batteries are administered system wide in February and March and scored by computers. This year the schedule for each grade and the tests administered was as follows.

Grade	Test	Dates Administered
2	Gates-MacGinitie Reading Test	February 3-14
3	Iowa Tests of Basic Skills	March 17-28
4	Iowa Tests of Basic Skills	March 3-14
5	Iowa Tests of Basic Skills	February 17-28
6	Iowa Tests of Basic Skills	February 3-14

This schedule allowed teachers to observe each child over half the school year before rating him on reading comprehension and classroom behavior. Additionally, since the data was collected the last two weeks of February, 1969--before the results of the standardized tests were returned to the teachers, their ratings were independent of these particular results (although admittedly they may have been influenced by knowledge of previous standardized test results).

The following information was collected from teachers on each child: sex, level of general reading achievement, difficulty of pupil discipline, and assignment to reading group.

A cover letter explained the study and gave directions. (See Appendix B)

After teachers returned their "Data Collection Sheets" to the principals one week after the material was disseminated to the principals, these sheets were forwarded to the central administrative office. When the results of the achievement test battery were returned from the computers to the central office, the investigator recorded each child's grade equivalent score on the reading comprehension subtest on the data collection sheet in the right-hand column. As far as the investigator knows, none of the respondents knew this information was being collected; only the administrators in the central office and the building principals were aware that this data would be recorded for each child.

After recording the achievement test results, the column on the data collection sheet identifying the children was cut off by an administrator in the central office, thus assuring complete anonymity to both teachers and pupils.

In addition to this information about each pupil, teachers were asked to provide the following information about themselves: sex, years of teaching experience, grade level, and age.

Of the 50 respondents, data from two sixth grade classrooms had to be omitted from the final analysis either because of irregularities in reporting data or failure to follow directions. Thus, data on only eight sixth grade classrooms was collected while the original number of classrooms, ten, was retained in each of grades two, three, four, and five. Data was collected on 1329 pupils distributed as follows: Grade 2 - 240, Grade 3 - 267, Grade 4 - 314, Grade 5 - 281, Grade 6 - 227. There were 655 girls and 674 boys in the sample.

#### Methods of Analyzing the Data

The data was analyzed in the following ways: (1) simple intercorrelations between each of the nine variables (teacher sex, grade level, years of teaching experience, teacher age, pupil sex, teacher

rating of pupil reading achievement, pupil reading group placement, teacher rating of pupil behavior, and standardized reading comprehension test score); (2) bivariate frequency distributions by grade level and pupil sex of teacher ratings of pupil reading achievement, pupil reading group placement, teacher ratings of pupil behavior, and reading test scores; (3) multiple regression analysis with teacher ratings of pupil reading achievement and pupil reading group placement as criteria and various variables as predictors (4)



## CHAPTER III

### FINDINGS AND ANALYSIS Results and Analyses

#### Descriptive Statistics

Teacher Characteristics. The following data describing the respondents was collected.

Table I

#### Descriptive Data on Respondents

---

##### Teacher sex

Female . . . 44 teachers; all grade levels  
Male . . . 4 teachers; sixth grade only

##### Years of teaching experience

Mean number . . . . . 13.06 years  
Standard deviation. . . . . 12.03 years  
Range . . . . . 1 to 43 years

##### Teacher age

Mean age. . . . . 39.47 years  
Standard deviation. . . . . 14.19 years  
Range . . . . . 22 to 65 years

---

The data indicate the respondents were a highly varied group. Therefore, there is no reason to suspect that the sample was biased on these variables.

Teacher Ratings of Pupil Reading Achievement. Teachers were asked to rate their pupils' reading achievement on a five-point scale with certain percentages suggested for each category so that the total ratings would approximate a bell-shaped distribution. Following are the categories, suggested percentages in each, and the actual percentage of pupils rated by the teachers as belonging in each category.

Table II  
Suggested and Actual Percentages of Teacher Ratings of  
Pupil Reading Achievement in Each of Five Categories

Rating	Suggested Percentage	Actual Percentage
1	10	12.65
2	20	24.25
3	40	35.66
4	20	18.79
5	10	8.61

---



The distribution of teachers' ratings, although slightly positively skewed, closely approximate the distribution suggested by the investigator. Thus, teachers generally did closely follow directions and no significant bias or distortion was introduced into the study in this way.

Data on teacher ratings were further divided into categories within each grade level according to pupil sex. This information is presented below in Table III.

An examination of the distribution of teacher ratings of pupil reading achievement by grade level and pupil sex, Table III, revealed the following:

1. No large differences between sexes in any grade for the total were found for the high rating, number one.
2. No large differences between sexes in grades two through five or for the total were found for rating number two.
3. A noticeable difference between sexes for grade six on rating number two was found.

Of all sixth grade female Ss, 31.93% were rated 2.  
Of all sixth grade male Ss, only 20.56% were rated 2.

4. No large differences between sexes for any grade or for the total were found or rating number three, average reading achievement.
5. No large differences between sexes for grades two through five or for the total were found for rating number four, below average reading achievement.
6. A noticeable difference between sexes for grade six on rating number four was found.

Of all sixth grade female Ss, 12.60% were rated 4.  
Of all sixth grade male Ss, 25.23% were rated 4.

7. No large differences between sexes for grades two and three were found for the lowest rating, number five.
8. Noticeable differences between sex for grades four through six were found for the lowest rating, number five.

Of all fourth grade female Ss, 6.41% were rated 5.  
Of all fourth grade male Ss, 15.82% were rated 5.

Of all fifth grade female Ss, 5.88% were rated 5.  
Of all fifth grade male Ss, 10.96% were rated 5.

Of all sixth grade female Ss, 2.52% were rated 5.  
Of all sixth grade male Ss, 10.28% were rated 5.

Table III  
Distribution of Teacher Ratings of  
Pupil Reading Achievement by Grade Level and Pupil Sex

		Teacher Rating Categories									
		1		2		3		4		5	
		N	%	N	%	N	%	N	%	N	%
2	F	19	7.91	25	10.42	48	20.00	23	9.58	6	2.50
	M	16	6.66	31	12.91	44	18.33	21	8.75	7	2.91
	T	35	14.58	56	23.33	92	38.33	44	18.33	13	5.41
3	F	13	4.86	34	12.73	42	15.73	23	8.61	11	4.11
	M	16	5.99	25	9.36	56	20.97	29	10.86	18	6.74
	T	29	10.86	59	22.09	98	36.70	52	19.47	29	10.86
4	F	25	7.93	41	13.01	55	17.46	25	7.93	10	3.17
	M	16	5.07	36	11.42	47	14.92	34	10.79	25	7.93
	T	41	13.01	77	24.76	102	32.38	59	18.73	35	11.11
5	F	17	6.02	31	10.99	52	18.43	28	9.92	8	2.83
	M	16	5.67	40	14.18	49	17.37	25	8.86	16	5.67
	T	33	11.70	71	25.17	101	35.81	53	18.79	24	8.51
6	F	17	7.17	38	16.03	46	19.40	15	6.32	3	1.26
	M	13	5.49	22	9.28	34	14.34	27	11.39	11	4.64
	T	30	12.65	60	25.31	80	33.75	43	18.14	14	5.90
T O T A L	F	91	6.78	168	12.60	243	18.12	114	8.50	38	2.83
	M	77	5.74	154	11.40	230	17.15	136	10.14	77	5.74
	T	168	12.52	323	24.01	473	35.27	250	18.64	115	8.57

9. A noticeable difference between sexes for the total was found for the lowest rating, number five.

Of all female Ss, 5.80% were rated 5.  
Of all male Ss, 11.42% were rated 5.

Reading Group Placement. Teachers were asked to indicate which reading group each pupil was in, one being the highest, two next, etc. A preliminary analysis revealed that a total of six groups were used. This information is presented below in Table IV.

Table IV

Reading Group Placement by Pupil Sex, Grades 2-6

	Reading Groups											
	1		2			3	4		5		6	
	N	%	N	%	N	%	N	%	N	%	N	%
F	296	45.19	209	31.91	102	15.57	41	6.26	6	0.92	1	0.15
M	242	35.91	217	32.20	149	22.11	53	7.86	10	1.48	3	0.45
T	538	40.55	426	32.05	251	18.84	94	7.06	16	1.20	4	0.30

However, since there were relatively few pupils in groups four, five and six, these cells were collapsed and merged with group three. This revised data is presented below in Table V.

Table V  
Reading Group Placement:  
Grades 2-6 With Groups 3-6 Collapsed

	Reading Groups					
	1		2		3	
	N	%	N	%	N	%
F	296	45.19	209	31.91	150	22.90
M	242	35.91	217	32.20	215	31.90
T	538	40.55	426	32.05	365	27.40

Data on pupil reading group placement were further divided into categories within each grade level according to pupil sex. This information is presented in Table VI. An examination of this data revealed the following.

1. No large differences between sexes were found for the high group in grades two, three, and five.
2. Noticeable differences between sexes were found for the high group for grades four and six, 28% girls vs. 20% boys and 24% girls vs. 16% boys, respectively.
3. A slight difference between sexes was found for the high group for the total, 22% girls vs. 18% boys.
4. No large differences between sexes were found for group number two in grades two, three, and five and for the total.
5. Small but noticeable differences between sexes were found for group number two in grades four and six, 14% girls vs. 17% boys and 19% girls vs. 14% boys, respectively.
6. No large differences between sexes were found for the lowest group (groups 3, 4, 5, and 6 combined) in grades two and five.
7. Noticeable differences between sexes were found for the lowest group in grades three, four, and six, 12% girls vs. 20% boys, 7% girls vs. 12% boys, and 10% girls vs. 16% boys, respectively.
8. A noticeable difference between sexes was found for the lowest group for the total, 11% girls vs. 16% boys.

Teacher Ratings of Pupil Behavior. Teachers were asked to rate their pupils' classroom behavior on a five-point scale with certain percentages suggested for each category so that the total ratings would approximate a bell-shaped distribution. Following are the categories, suggested percentages in each, and the actual percentages of pupils rated by the teachers as belonging in each category.

Table VI  
Distribution of Reading Group Placement  
by Grade Level and Pupil Sex

		Reading Groups					
		1		2		3	
		N	%	N	%	N	%
2	F	39	16.25	41	17.08	41	17.08
	M	36	15.00	38	15.83	45	18.75
	T	75	31.25	79	32.91	86	35.83
3	F	51	19.10	40	14.98	32	11.98
	M	43	16.10	48	17.97	53	19.85
	T	94	35.20	88	32.95	85	31.83
4	F	88	27.93	44	13.96	24	7.61
	M	65	20.63	55	17.46	39	12.38
	T	153	48.57	99	31.42	63	20.00
5	F	64	22.69	41	14.53	31	10.99
	M	61	21.63	44	15.60	41	14.53
	T	125	44.32	85	30.14	72	25.53
6	F	54	24.00	43	19.11	22	9.77
	M	37	16.44	32	14.22	37	16.44
	T	91	40.44	75	33.33	59	26.22
T O T A L	F	296	22.18	209	15.66	150	11.24
	M	242	18.14	217	16.36	215	16.11
	T	538	40.55	426	32.05	365	27.40



Table VII  
Suggested and Actual Percentages of  
Teacher Ratings of Pupil Behavior in Each Category

Rating	Suggested Percentage	Actual Percentage
1	10	29.91
2	20	32.30
3	40	26.28
4	20	8.47
5	10	2.62

The distribution of teachers' ratings is strongly positively skewed and do not begin to approach the percentages suggested for each category. However, the instructions to each teacher allowed great deviation in this matter by specifically stating "You are NOT bound to these percentages in any way! If your class has more than the normal proportion of well-behaved or hard-to-discipline pupils, do not hesitate to indicate this in your rating." Since there is little reason to believe that pupil behavior must approximate a bell-shaped distribution, these deviations between actual and suggested percentages are not disturbing to the investigator nor damaging to the study in any evident way.

Data on teacher ratings were further divided into categories within each grade level according to pupil sex. This information is presented in Table VIII.

An examination of the distribution of teacher ratings of pupil behavior by grade level and pupil sex, Table VIII, revealed an obvious and definite trend for girls to be rated higher in classroom behavior than boys. This trend was particularly evident for the highest rating (number one) and for the average rating (number three) and the below average rating (number four). However, it was indistinguishable for ratings two and five. This trend was so repeated, consistent and evident that individual cell analysis was not to be done as it was for Tables III and VI.

Standardized Reading Test Results. The distribution of the scores obtained on the standardized reading test were not of interest in and of themselves. Rather, their primary value was an objective standard against which to compare the subjective teacher ratings of pupil reading achievements to determine whether there was any evident teacher bias against boys. The distribution of teacher ratings of pupil reading achievement had been determined by sex within each grade level (Table III). A frequency distribution of the standardized reading test results for each grade was compiled showing the sex of each pupil obtaining that particular grade equivalent score. These data were divided into five categories corresponding exactly with the total number of Ss in each of the categories in Table III which showed the distribution of teacher ratings of pupil reading achievement by grade level and pupil sex. That is, 35 second-grade Ss, 19 females and 16 males, were given a one rating by their teachers. Therefore, the 35 second-grade Ss receiving the highest standardized reading test scores were selected to be category one in Table IX. The number of females and males in this sample was then determined and this figure

Table VIII  
Distribution of Teacher Ratings of Pupil Behavior  
by Grade Level and Pupil Sex

		Teacher Rating Categories									
		1		2		3		4		5	
		N	%	N	%	N	%	N	%	N	%
2	F	51	21.25	42	17.50	25	10.42	2	0.83	1	0.41
	M	32	13.33	32	13.33	42	17.50	9	3.75	4	1.66
	T	83	34.58	74	30.83	67	27.91	11	4.58	5	2.08
3	F	31	11.61	55	20.59	31	11.61	5	1.87	1	0.37
	M	22	8.23	54	20.22	42	15.73	23	8.61	3	1.12
	T	53	22.08	109	40.82	73	27.34	28	10.43	4	1.49
4	F	70	22.22	32	10.15	33	10.47	9	2.85	12	3.80
	M	32	10.15	47	14.92	54	17.14	24	7.61	7	2.22
	T	102	32.38	79	25.07	87	27.61	32	10.15	19	6.03
5	F	42	14.89	48	17.02	35	12.41	11	3.90	0	0.00
	M	30	10.63	47	16.66	50	17.73	16	5.67	3	1.06
	T	72	25.53	95	33.68	85	30.14	27	9.57	3	1.06
6	F	61	27.11	40	17.77	16	7.11	2	0.88	0	0.00
	M	28	12.44	34	15.11	28	12.44	13	5.77	4	1.77
	T	89	39.55	74	32.88	44	19.55	15	6.66	4	1.77
T O T A L	F	255	16.86	217	16.26	140	10.49	29	2.17	14	1.04
	M	144	10.79	214	16.04	216	16.19	85	6.37	21	1.57
	T	399	29.91	431	32.30	356	26.68	113	8.47	35	2.62

**Table IX**  
**Distribution of Reading Test Scores**  
**by Grade Level & Pupil Sex Corresponding**  
**to Distribution of Teacher Ratings of Pupil Reading Achievement**  
**Revealed in Table III**

		Reading Test Score Categories									
		1		2		3		4		5	
		N	%	N	%	N	%	N	%	N	%
2	F	14	5.83	34	14.16	47	19.58	22	9.16	5	2.08
	M	21	8.75	22	9.16	45	18.75	22	9.16	8	3.33
	T	35	14.58	56	23.33	92	38.33	44	18.33	13	5.41
3	F	16	5.99	31	11.61	46	17.22	23	8.61	8	2.99
	M	13	4.86	28	10.48	52	19.47	28	10.48	21	7.86
	T	29	10.86	59	22.09	98	36.70	52	19.47	29	10.86
4	F	18	5.71	46	14.60	51	16.19	28	8.88	14	4.44
	M	23	7.30	31	10.15	51	16.19	31	9.84	21	6.66
	T	41	13.01	77	24.76	102	32.38	59	18.73	35	11.11
5	F	14	4.96	33	11.70	45	15.95	28	9.92	14	4.96
	M	19	6.73	38	13.47	56	19.85	24	8.51	10	3.54
	T	33	11.70	71	25.17	101	35.81	53	18.79	24	8.51
6	F	16	6.75	32	13.50	52	21.94	17	7.17	2	0.84
	M	14	5.91	28	11.81	28	11.81	26	10.97	12	5.06
	T	30	12.65	60	26.43	80	35.24	43	18.94	14	5.91
T O T A L	F	78	5.81	175	13.12	241	17.97	118	8.79	43	3.20
	M	90	6.71	148	11.03	232	17.30	131	9.84	72	5.36
	T	168	12.52	323	24.01	473	35.27	250	18.14	115	8.52

then entered in category one. This procedure was followed for all categories within each grade level. Thus, since it is presumed that standardized reading tests are not biased against boys, if teachers were biased against boys and allowed this bias to influence their ratings of boys' reading achievement, a comparison of the percentage of boys in each category within each grade level on these two measures----standardized test scores and teacher ratings of pupil reading achievement----should either reveal this bias or indicate definite trends. These comparisons, grade by grade for boys, are shown in Tables X, XI, XIII, XIV, and XV.

If teachers were biased against boys and in favor of girls, it should show up in these tables in the following way. In categories one and two, the percentage of boys identified by the objective measure, standardized test scores, should be larger than those identified by the subjective measure, teacher ratings. Conversely, in the lowest two categories, four and five, the relative size of these percentages should be reversed; the percentage in the teacher rating row should be larger than that in the standardized test row.

An analysis of Tables X through XV revealed very little systematic bias and no really significant trends. The only evidence of bias occurred in the following cells where there was a difference of at least five Ss ( or four percentage points) between the "expected" number ( as indicated by standardized test scores) and the "observed" number ( as determined by teacher ratings).

1. Grade two, category one -	"Expected" - 21 males; 17.79%
	"Observed" - 16 males; 13.44%
2. Grade two, category two -	"Expected" - 22 males; 18.61%
	"Observed" - 31 males; 26.05%
3. Grade four, category one -	"Expected" - 23 males; 14.55%
	"Observed" - 16 males; 10.12%
4. Grade five, category three -	"Expected" - 56 males; 38.00%
	"Observed" - 40 males; 33.56%
5. Grade five, category five -	"Expected" - 10 males; 6.80%
	"Observed" - 16 males; 10.95%
6. Grade six, category two -	"Expected" - 28 males; 25.92%
	"Observed" - 22 males; 20.56%
7. Grade six, category three -	"Expected" - 35 males; 25.92%
	"Observed" - 34 males; 31.77%



Table X  
Percentage of Second - Grade Males Identified  
by Teacher Ratings and by Standardized Test Scores  
in Each Category Rating

	Categories									
	1		2		3		4		5	
	N	%	N	%	N	%	N	%	N	%
Teacher Ratings	16	13.44	31	26.05	44	36.97	21	17.64	77	55.88
Standardized Tests	21	17.79	22	18.64	45	38.13	22	18.64	8	6.77

Table XI  
Percentage of Third - Grade Males Identified  
by Teacher Ratings and by Standardized Test Scores  
in Each Category Rating

	Categories									
	1		2		3		4		5	
	N	%	N	%	N	%	N	%	N	%
Teacher Ratings	16	11.11	25	17.36	56	38.88	29	20.13	18	12.50
Standardized Tests	13	9.15	28	19.71	52	36.61	28	19.71	21	14.78

Table XII  
Percentage of Fourth - Grade Males Identified  
by Teacher Ratings and by Standardized Test Scores  
in Each Category Rating

	Categories									
	1		2		3		4		5	
	N	%	N	%	N	%	N	%	N	%
Teacher Ratings	16	10.12	36	22.78	45	29.74	34	21.51	25	15.82
Standardized Tests	23	14.55	31	19.62	51	32.27	31	19.62	21	13.29



Table XIII  
Percentage of Fifth - Grade Males Identified  
by Teacher Ratings and by Standardized Test Scores  
in Each Category Rating

	Categories									
	1		2		3		4		5	
	N	%	N	%	N	%	N	%	N	%
Teacher Ratings	16	10.95	40	27.39	49	33.56	25	17.12	16	10.95
Standardized Tests	19	12.92	38	25.85	56	38.09	24	16.32	10	6.80

Table XIV  
Percentage of Sixth - Grade Males Identified  
by Teacher Ratings and by Standardized Test Scores  
in Each Category Rating

	Categories									
	1		2		3		4		5	
	N	%	N	%	N	%	N	%	N	%
Teacher Ratings	13	12.14	22	20.56	34	31.77	27	25.23	11	10.26
Standardized Tests	14	12.96	28	25.92	28	25.92	26	24.07	12	11.11

Table XV  
Percentage of Total Males Identified  
by Teacher Ratings and by Standardized Test Scores  
in Each Category Rating

	Categories									
	1		2		3		4		5	
	N	%	N	%	N	%	N	%	N	%
Teacher Ratings	77	11.44	153	22.88	231	34.17	136	20.20	77	11.44
Standardized Tests	90	13.37	148	21.99	232	34.47	151	19.46	72	10.69

Additionally, in the total number of males (Table XV), the "expected" number in category one was 90 while only 77 were "observed". Even though this looks like a large number of raw cases, when converted into percentages it was only a two percent difference.

The differences noted above can be interpreted this way. In grade two, the teachers put somewhat fewer boys into category one than the standardized test scores indicated should have been included. However, they more than compensated for this by putting quite a few more in category two than was expected on the basis of standardized test results. The same thing seemed to occur in categories one and two in grade four and in categories two and three in grade six.

In only one instance above was there any indication of possible bias in the lower categories. In grade five, the "expected" number of males in category five was 10 (6.80%) whereas the "observed" number was 16 (10.95%).

Thus, there is a slight indication that teachers did not give as many boys a one rating as they should have if standardized test scores are used as a criterion. However, since the absolute number and the percentage are both so small, particularly when the number of teachers and pupils are taken into consideration, the practical significance of this finding is questionable. If errors of measurement were available, these discrepancies would probably be statistically undetectable.

And there is no compelling evidence of systematic bias against boys in the lower categories.

A similar comparison was made using the standardized reading test results as the objective standard, the "expected" distribution, and teacher assignment of pupils to reading groups as the subjective measure, the "observed" distribution. The distribution of assignment to reading group had been determined by sex within each grade level (Table VI). A frequency distribution of the standardized test results for each grade was compiled showing the sex of each pupil obtaining that particular grade equivalent score. These data were divided into three categories corresponding exactly with the total number of Ss in each of the categories in Table VI. That is, 75 second-grade Ss, 39 females and 36 males, were assigned to the top reading group by their teachers. Therefore, the 75 second-grade Ss, receiving the highest standardized reading test scores were selected to be category one in Table XVI. The number of females and males in this sample was then determined and this figure entered in category one in the standardized test results row. This procedure was followed for all categories within each grade level. Thus, since it is presumed that standardized reading tests are not biased against boys, if teachers were biased against boys and allowed this bias to influence their assignment of boys to different reading groups, a

Table XVI  
Percentage of Second-Grade Males Identified by  
Reading Group Placement & by Standardized Test Scores  
in Each Reading Group

	Reading Groups					
	1		2		3	
	N	%	N	%	N	%
Reading Group Placement	36	30.25	38	31.93	45	37.81
Standardized Test Results	38	31.93	38	31.93	43	36.13

Table XVII  
Percentage of Third-Grade Males Identified by  
Reading Group Placement & by Standardized Test Scores  
in Each Reading Group

	Reading Groups					
	1		2		3	
	N	%	N	%	N	%
Reading Group Placement	43	29.86	48	33.33	53	36.80
Standardized Test Results	43	29.86	49	34.02	52	36.11

Table XVIII  
Percentage of Fourth-Grade Males Identified by  
Reading Group Placement & by Standardized Test Scores  
in Each Reading Group

	Reading Groups					
	1		2		3	
	N	%	N	%	N	%
Reading Group Placement	65	40.88	55	34.59	39	24.52
Standardized Test Results	71	44.65	54	33.96	34	21.38

Table XIX  
Percentage of Fifth Grade Males Identified by  
Reading Group Placement & by Standardized Test Scores  
in Each Reading Group

	Reading Groups					
	1		2		3	
	N	%	N	%	N	%
Reading Group Placement	61	41.78	44	30.13	41	28.08
Standardized Test Results	68	46.57	47	32.19	31	21.23

Table XX  
Percentage of Sixth-Grade Males Identified by  
Reading Group Placement & by Standardized Test Scores  
in Each Reading Group

	Reading Groups					
	1		2		3	
	N	%	N	%	N	%
Reading Group Placement	37	34.90	32	30.18	37	34.90
Standardized Test Results	39	36.79	22	20.75	45	42.45

Table XXI  
Percentage of Total Males Identified by  
Reading Group Placement & by Standardized Test Scores  
in Each Reading Group

	Reading Groups					
	1		2		3	
	N	%	N	%	N	%
Reading Group Placement	242	35.90	217	32.19	215	31.88
Standardized Test Results	259	38.42	210	31.15	205	30.41



comparison of the number and percentage of boys in each category within each grade level on these two measures----standardized test scores and teacher ratings of pupil reading achievement----should either reveal this bias or indicate definite trends. These comparisons, grade by grade for boys, are shown in Tables XVI, XVII, XVIII, XIX, XX, and XXI.

If teachers were biased against boys and in favor of girls, it should show up in these tables in the following way. In category one, the upper reading group, the percentage of boys identified by the objective measure, standardized test scores, should be larger than those identified by the subjective measure, teacher assignment to reading group. Conversely, in the lowest category, three, the relative size of these percentages should be reversed; the percentage in the teacher assignment row should be larger than that in the standardized test row.

An analysis of Tables XVI through XXI revealed a slight amount of systematic bias and a possible, but not a certain, distinct trend. Evidence of bias occurred in the following cells where there was a difference of at least five Ss (or three percentage points) between the "expected" number (as indicated by standardized test scores) and the "observed" number (as determined by teacher assignment to reading groups).

1. Grade four, group one -- "Expected" - 71 males; 44.65%  
"Observed" - 65 males; 40.88%
2. Grade four, group three -- "Expected" - 34 males; 21.38%  
"Observed" - 39 males; 24.52%
3. Grade five, group one -- "Expected" - 68 males; 46.57%  
"Observed" - 61 males; 41.78%
4. Grade five, group three -- "Expected" - 31 males; 21.23%  
"Observed" - 41 males; 28.08%
5. Grade six, group two -- "Expected" - 22 males; 20.75%  
"Observed" - 32 males; 30.18%
6. Grade six, group three -- "Expected" - 45 males; 42.45%  
"Observed" - 37 males; 34.90%

The differences noted above can be interpreted this way. In grade four, the teachers put somewhat fewer boys into reading group one than the standardized test scores indicated should be included and a few more into reading group three than the standardized test scores indicated should be included. The same thing occurred in groups one and three in grade five and in groups two and three in grade six.

It is interesting---but puzzling---that no discrepancies were noted in either grade two or three.

Thus, there is a slight but distinct indication that teachers in grades four, five, and six did not place as many boys in the top reading group as they should have if standardized test scores are used as a criterion. And conversely, they placed a few more in the lowest group than standardized reading test scores indicated should have been included. However, since the absolute number and the percentage are not so great as to rule out possibilities of errors of measurement, the practical significance of this finding is not clear-cut, definitely generalizable, nor persuasively convincing.

In both of the above comparisons using standardized reading test scores as criteria, it should be remembered that there is no way of knowing whether the pupils included in the "expected" distributions were those originally included in the "observed" distributions. The correlation coefficients reported in the following section of this report indicate that there are numerous discrepancies between the rank order of standardized reading test scores and the rank order of teacher rating of pupil reading achievement. Therefore, all that the above analyses attempted to answer was whether these discrepancies were systematically biased against the boys.

Intercorrelations. Intercorrelations between all nine variables were computed. Those between the following variables were omitted from this report as being uninformative and irrelevant: teacher sex, grade level, years of experience, and teacher age (variables 1-4). The correlations between the remaining five variables were:

Table XXII

Intercorrelations between Pupil Sex, Teacher Rating of Pupil Achievement, Reading Group Placement, Teacher Rating of Pupil Behavior, and Standardized Reading Test Scores

Variables	5 (Pupil Sex)	6 (Teacher Rating)	7 (Reading Group)	8 (Pupil Behavior)	*9 (Test Scores)
5	----	0.0981	0.1078	0.2266	-0.414
6	----	-----	0.7082	0.3896	-0.5437
7	----	-----	-----	0.2849	-0.4594
8	----	-----	-----	-----	-0.2542

\*Even though reported as negative, these correlations are in actuality positive since the highest rating on each of the variables 6, 7, and 8 was a one and the lowest was a five. In the rest of the report, these negative correlations will be referred to as if they were positive---which in fact they are.

Pupil sex (Variable 5). Except that there is some relationship (.23) between pupil sex and behavior, with boys being rated lower than girls, no important correlations were evident.

Teacher ratings of level of pupil reading comprehension (Variable 6). The size of the correlation between teacher rating and other variables was larger than any others. The correlation of .71 between teacher ratings and reading group placement indicates that teachers assigned pupils to reading groups approximately in relation to their assessment of pupil reading achievement. On the contrary, the correlation between teacher ratings and standardized text results was only moderate, .54, indicating numerous discrepancies between teacher rating of pupil achievement and how pupils scored on standardized tests. Additionally, the correlation of .39 between teacher rating and teacher rating of pupil behavior indicated that the more a child is rated as a discipline problem, the lower he will tend to be rated on reading achievement.

Reading group placement (Variable 7). The correlation of .28 between this variable and pupil behavior indicates that the more a child is rated as a discipline problem, the lower the reading group he will be assigned to. The moderate correlation between this reading group placement and standardized test results, .46, indicates that even though teachers tend to assign pupils to reading groups somewhat in relation to standardized test results, there are numerous deviations. It is informative but puzzling to find that there is a higher correlation between teacher ratings of reading achievement and reading group placement, .71, than between reading group placement and standardized test results, .46. Apparently if pupils were now re-assigned to reading groups on the basis of standardized test results, there would be numerous changes.

Pupil behavior. (Variable 8). The correlation of .25 between this variable and standardized test results indicates that there is a slight tendency for lowered reading achievement to accompany lower teacher ratings of pupil behavior.

Comparisons between Correlations. Comparisons between correlations were made to determine whether there was a larger relationship between variables X and Y than between X and Z. The following questions were asked which required comparisons.

1. Does pupil sex (variable 5) influence teacher rating of reading achievement (variable 6) as it does standardized test results (variable 9)?

$$r_{56} = .09$$

$$r_{59} = .04$$

Apparently the answer to this question is that it does not influence one more than the other.



2. Does pupil sex (variable 5) influence teacher rating (variable 6) as it does reading group placement (variable 7)?

$$r_{56} = .09$$

$$r_{57} = .10$$

Apparently the answer to this question is that it does not influence one more than the other.

3. Does pupil sex (variable 5) influence reading group placement (variable 7) as it does standardized test results (variable 9)?

$$r_{57} = .10$$

$$r_{59} = .04$$

Apparently the answer to this question is that it does not influence one more than the other.

4. Does teacher rating (variable 6) correlate with reading group placement (variable 7) as it does with standardized test results (variable 9)?

$$r_{67} = .71$$

$$r_{69} = .54$$

Apparently there would be quite a few changes in reading group placement if standardized test results were used as the criterion rather than teacher assessment of pupil reading achievement.

5. Does pupil behavior (variable 8) correlate with teacher rating (variable 6) as it does with reading group placement (variable 7)?

$$r_{86} = .36$$

$$r_{87} = .28$$

There is a slightly higher relationship between teacher rating of pupil behavior and teacher rating of reading achievement than between pupil behavior and reading group placement possibly indicating that teachers let pupil behavior influence their perception of pupil reading achievement more than they do the placement of these pupils in reading groups. However, the difference between these two correlations might be accounted for by the fact that there is a wider range of teacher assessment of reading achievement (five categories) than there is in the typical number of reading groups (commonly three groups).



6. Does pupil behavior (variable 8) correlate with teacher rating (variable 6) as it does with standardized test results (variable 9)?

$$r_{86} = .39$$

$$r_{89} = .25$$

This indicates that teachers may let pupil behavior influence to some extent their assessment of pupil reading achievement since there is a higher correlation between these variables than between pupil behavior and a totally objective measure, standardized reading test results.

7. Does pupil behavior (variable 8) correlate with reading group placement (variable 7) as it does with standardized test results (variable 9)?

$$r_{78} = .28$$

$$r_{89} = .25$$

Apparently the answer to this question is that it does not influence one more than the other.

### Inferential Statistics

Testing the Hypotheses via F Tests. The hypotheses were tested using the method of comparing multiple regression models rather than the multivariate factorial analysis of covariance originally proposed. Roscoe (20: 282-84) has shown that the comparison of two multiple regression models in this fashion is mathematically equivalent to the traditional analysis of covariance. The following results were obtained from this analysis.

Hypothesis 1: Teacher ratings of pupil reading achievement compared to results of standardized reading tests will be sex-biased in favor of girls. Controlling standardized test scores, is teacher rating of pupil reading achievement influenced by pupil sex?)

Table XXIII

#### Multiple Regression Analysis: Hypothesis 1

Criterion: Teacher Ratings of Pupil Reading Achievement

Full Model: Predictors: Pupil sex and Standardized reading test scores.

$$RSQ = 0.3013$$

Restricted Model: Predictor: Standardized reading test scores.

$$RSQ = 0.2956$$

$$F = 10.8606^*, df = 1, 1326$$

\*Significant at the .01 level,  $F = 6.64$

Hypothesis 2A: Teacher ratings of pupil reading achievement will be influenced by teacher perception of difficulty of pupil discipline. (Controlling sex and standardized reading test scores, does teacher rating of pupil behavior influence teacher rating of pupil reading achievement?)

Table XXIV  
Multiple Regression Analysis: Hypothesis 2A

Criterion: Teacher Ratings of Pupil Reading Achievement

Full Model: Predictors: Pupil sex, teacher ratings of pupil behavior, and standardized reading test scores.

RSQ = 0.3635

Restricted model: Predictors: Pupil sex, standardized reading test scores.

RSQ = 0.3013

$F = 129.4576^*$ ,  $df = 1, 1325$

\*Significant at the .01 level,  $F = 6.64$

Hypothesis 2B: Teacher ratings of pupil reading achievement will be influenced more by pupil discipline problems if the ratee is a boy than a girl. (Controlling pupil sex, does teacher rating of pupil behavior influence teacher rating of pupil reading achievement?)

Table XXV  
Multiple Regression Analysis: Hypothesis 2B

Criterion: Teacher Ratings of Pupil Reading Achievement

Full Model: Predictors: Teacher ratings of pupil behavior, pupil sex, and standardized reading test scores.

RSQ = 0.3625

Restricted Model: Predictors: Teacher ratings of pupil behavior and standardized reading test scores.

RSQ = 0.3632

$F = 0.75$ ,  $df = 1, 1323$

**Hypothesis 3:** Assignment to reading groups will be sex-biased. (Controlling standardized reading test scores, does pupil sex influence reading group placement?)

Table XXVI

**Multiple Regression Analysis: Hypothesis 3**

**Criterion:** Reading Group Placement

**Full Model: Predictors:** Pupil sex and pupil reading group placement.

RSQ = 0.2189

**Restricted Model: Predictor:** Pupil reading group placement

RSQ = 0.2110

F = 13.3951\*, df = 1, 1326

\*Significant at the .01 level, F = 6.64

**Hypothesis 4A:** Teacher ratings of pupil reading achievement will be sex-biased in favor of girls but will be uninfluenced by teacher sex, grade level, and years of experience. (Controlling teacher sex, grade level, and years of experience, does pupil sex influence teacher rating of pupil reading achievement?)

Table XXVII

**Multiple Regression Analysis: Hypothesis 4A**

**Criterion:** Teacher Ratings of Pupil Reading Achievement

**Full Model: Predictors:** Teacher sex, grade level, years of experience, pupil sex, and standardized reading test scores.

RSQ = 0.5679

**Restricted Model: Predictors:** Teacher sex, grade level, years of experience, and standardized reading test scores.

RSQ = 0.5632

F = 14.5099\*, df = 1, 1323

\*Significant at the .01 level, F = 6.64

**Hypothesis 4B:** Teacher ratings of pupil reading achievement will be influenced by teacher perception of difficulty of pupil discipline but will be uninfluenced by teacher sex, grade level, years of experience, and pupil sex. (Controlling teacher sex, grade level, years of experience, and pupil sex, does teacher rating of pupil behavior influence teacher ratings of pupil reading achievement?)

Table XXVIII

**Multiple Regression Analysis: Hypothesis 4B**

**Criterion:** Teacher Ratings of Pupil Reading Achievement

**Full Model: Predictors:** Teacher sex, grade level, years of experience, teacher rating of pupil behavior, and standardized reading test scores.  
RSQ = 0.5851

**Restricted Model: Predictors:** Teacher sex, grade level, years of experience, and standardized reading test scores.  
RSQ = 0.5632

**F = 59.1937\*, df = 1, 1322**

\*Significant at the .01 level, F = 6.64

**Hypothesis 4C:** Teacher ratings of pupil reading achievement will be influenced by teacher perception of difficulty of pupil discipline but will be uninfluenced by teacher sex, grade level, and years of experience. (Controlling teacher sex, grade level, and years of experience, does teacher rating of pupil behavior influence teacher ratings of pupil reading achievement?)

Table XXIX

**Multiple Regression Analysis: Hypothesis 4C**

**Criterion:** Teacher Ratings of Pupil Reading Achievement

**Full Model: Predictors:** Teacher sex, grade level, years of experience, teacher rating of pupil behavior, and standardized reading test scores.  
RSQ = 0.5851

**Restricted Model: Predictors:** Teacher sex, grade level, years of experience, and standardized reading test scores.  
RSQ = 0.5632

**F = 70.0601\*, df = 1, 1323**

\*Significant at the .01 level, F = 6.64



Hypothesis 4D: Assignment to reading group will be influenced by pupil sex but will be uninfluenced by teacher sex, grade level, years of experience, and standardized reading test scores. (Controlling teacher sex, grade level, years of experience, and standardized reading test scores, does pupil sex influence assignment to reading group?)

Table XXX

Multiple Regression Analysis: Hypothesis 4D

Criterion: Reading Group Placement

Full Model: Predictors: Teacher Sex, grade level, years of experience, teacher of pupil behavior, and standardized reading test scores.

RSQ = 0.3505

Restricted Model: Predictors: Teacher sex, grade level, years of experience, and standardized reading test scores.

RSQ = 0.3434

F = 14.5159\*, df = 1, 1323

\*Significant at the .01 level, F = 6.64

Thus, all of the hypotheses except one were found to be statistically significant. However, the method used of comparing multiple regression models is powerful and, with the large samples used in this study, it is unlikely to yield a statistically nonsignificant finding. For example, the difference in RSQ between the full and the restricted model is minute or zero for six of the eight comparisons, e.g.,

Hypothesis 1 - RSQ for full model .....0.3013  
RSQ for restricted model...0.2956

This raises the question of whether statistical significance can be equated with practical significance. Therefore, the rest of this section of the report will focus on (1) the RSQ (square of the multiple correlation coefficient) as an index of relationship (the proportion of the criterion variance accounted for by the predictors) and (2) the practical---as contrasted with the statistical---significance of the findings.

Table XXI.  
Multiple Regression Models Using as a Criterion  
Teacher Rating of Pupil Reading Achievement

Model Number	Predictors							RSQ
	Teacher Sex	Grade Level	Years of Experience	Teacher Age	Pupil Sex	Pupil Behavior	Reading Test	
1					*		*	0.3013
2							*	0.2956
3					*	*	*	0.3635
4						*	*	0.3632
5	*	*	*		*		*	0.5679
6	*	*	*				*	0.5632
7	*	*	*		*	*	*	0.5864
8	*	*	*			*	*	0.5851
9	*		*	*	*		*	0.3396
10	*		*	*	*	*	*	0.3900

Table XXXII.  
Multiple Regression Models Using as a Criterion  
Reading Group Placement

Model Number	Teacher Sex	Grade Level	Years of Experience	Pupil Sex	Pupil Behavior	Reading Test	RSQ
11						*	0.2110
12				*		*	0.2189
13				*	*	*	0.2440
14	*	*	*	*		*	0.3505
15	*	*	*			*	0.3434
16	*	*	*	*	*	*	0.3604

Analysis of the Data Via RSQs. Tables XXXI and XXXII present the RSQs for the 16 multiple regression models. Table XXXI presents the RSQs for models 1-10 in which the criterion is teacher rating of pupil reading. Table XXXII presents the RSQs for models 11-16 in which the criterion is reading group placement.

A comparison of Models 1 and 2 shows that approximately 30 percent of the variance in teacher rating of pupil reading achievement could be attributed solely to standardized test scores and that the addition of pupil sex failed to increase this proportion hardly at all. This suggests that teachers ignore pupil sex when assessing reading achievement.

A comparison of Models 1 and 3 is informative. By adding pupil behavior to pupil sex and standardized reading test scores, a somewhat greater percentage of the variance in teacher rating of pupil reading achievement is accounted for, 36 percent vs. 30 percent. These findings tend to corroborate those found in the intercorrelations between variables reported on earlier in this chapter.

When Models 3 and 4 are compared, it is found that dropping pupil sex from the equation didn't decrease the size of the variance accounted for. This finding tends to substantiate that shown in the comparison of Models 1 and 2, that teachers apparently ignore pupil sex when assessing pupil reading achievement.

But even though teachers apparently are objective about pupil sex when subjectively rating pupil reading achievement, a comparison of Models 1 and 3 suggests that when teachers assessed pupil reading achievement to a small extent they considered pupil behavior since the RSQ is increased from 0.3013 (Model 1) to 0.3635 (Model 3) by the addition of teacher ratings of pupil behavior.

The RSQs of Models 5, 6, 7, and 8 failed to reveal either pupil sex or pupil behavior----or a combination of the two----as an important contributor to the proportion of the variance accounted for. Four variables, teacher sex, grade level, years of experience, and standardized reading test scores, account for 56 percent of the variance (Model 6) which is virtually the identical proportion accounted for by Models 5, 7, and 8 each of which contains one or both of pupil sex and pupil behavior.

However, if stock is put in small differences, the RSQs of these models should be examined closely. The RSQ for Model 7 is increased 0.0047 from that of Model 8 by the addition of pupil sex as a predictor. But when pupil behavior is added as a predictor (Model 10), the RSQ "jumps" 0.0219 (2.19 percentage points) whereas when both pupil sex and pupil behavior are added (Model 9), the RSQ is increased only minisculely more to 0.02332. If these figures mean anything at all, they serve as an additional shred of evidence that it is pupil behavior to which teachers respond and not pupil sex.



An examination of the standard weight of each predictor in the multiple regression analysis showed repeatedly that grade level was quite potent in comparison to other predictors when teacher rating of pupil reading achievement was the criterion. For example, on Model 5, these were the standard weights for each predictor.

Teacher.....	0.0258
Grade level.....	0.7060
Years of experience.....	0.0694
Pupil sex.....	0.0079
Standardized reading test score....	1.0292

It was hypothesized that possibly grade level was such a powerful influence that it was concealing the influence of teacher rating of pupil behavior upon teacher rating of pupil reading achievement. Therefore, to test this hypothesis, Models 9 and 10 were run in which grade level was omitted. Adding teacher rating of pupil behavior to teacher sex, years of experience, teacher age, pupil sex, and reading test score raised the RSQ from 0.3396 to 0.3900. The deletion of grade level lowers the RSQ appreciably----and therefore the effectiveness of the prediction. However, it appears that the suspicion was correct that teacher rating of pupil behavior is an important contributor to teacher rating of pupil reading achievement and that this contribution can be seen more clearly when not overwhelmed by the influence of grade level.

Furthermore, it is interesting and possibly informative to compare the RSQs of Model 1 and 3 with those of Models 9 and 10. In Models 1 and 3, the addition of teacher rating of pupil behavior increased the percentage of the variance accounted for by slightly over six percent. Nearly the same percentage increase is found in comparing Models 9 and 10, 0.3396 and 0.3900. Thus, it appears that when the overwhelming influence of grade level is deleted, teacher rating of pupil behavior remains approximately constant in the amount it contributes to the RSQ (the percentage of the variance accounted for by various predictors).

An examination of Table XXII reveals the differential contribution of pupil sex and teacher rating of pupil behavior to reading group placement. The addition of pupil sex to standardized reading test scores (Model 11) raises the RSQ minusculely, less than one percent, while the addition of teacher rating of pupil behavior (Model 12) increases the amount of variance accounted for somewhat more, about two and one-half percent.

A comparison of the RSQs for Models 14, 15, and 16 indicates that pupil sex contributes virtually nothing to the prediction of reading group placement (Models 14 and 15) while teacher rating of pupil behavior contributes so little as to be of no practical significance. However, even this small contribution, when seen together with that shown in Models 12 and 13, shows a consistent trend for teacher rating of pupil behavior to be much more influential in determining reading group placement than is pupil sex.

## CHAPTER IV

### CONCLUSIONS AND RECOMMENDATIONS

#### Conclusions

This study dealt with the influence of two variables, pupil sex and teacher rating of pupil behavior, upon two criterion measures, teacher rating of pupil reading achievement and reading group placement of pupil. Therefore, there are four major conclusions involving these factors which will first be drawn from the findings and analyses. Then subsidiary conclusions will be made. All of these should be interpreted in the light of the kind, size, composition, and geographic location of the sample population as well as considering other unspecified but influential variables present in any similar survey study.

1. There was no evidence of systematic sex bias in teacher rating of pupil reading achievement.

The only evidence to support any sex bias on the part of teachers was found when comparing standardized reading test scores with teacher ratings and this was slight and neither consistent nor convincing. Neither comparisons of correlation coefficients nor multiple regression analysis revealed any such bias. Therefore, there is little reason to believe that teachers let pupil sex influence their rating of pupil reading achievement. Any discrepancies between teacher rating of pupil reading achievement and standardized test results are asexual. Hypothesis one was not supported.

2. There was no compelling evidence of large-scale sex bias in reading group placement of pupils.

The only evidence was found when comparing standardized test scores with teacher assignment to reading groups and this was small and evident only in grades 4, 5, and 6. Neither comparisons of correlation coefficients nor multiple regression analysis revealed any such bias. Therefore, there is little reason to believe that teachers let pupil sex influence their assignment of pupils to reading groups. Any discrepancies between teacher assignment to reading groups and the results of standardized tests may have been asexual and the result of chance error rather than systematic bias. Hypothesis three was not supported.

3. There was repeated evidence of pupil behavior bias in teacher ratings of pupil reading achievement.

Evidence of such bias was revealed by both multiple regression analysis and correlation of coefficients. (This question did not lend itself to analysis via comparison of corresponding, proportional frequency distributions). However, this evidence was consistently small indicating that not all teachers down-rated the reading achievement of pupils seen as discipline problems. It is clear

though that in assessing pupil reading achievement teachers responded not at all to pupil sex but to pupils seen as behavior problems.

Thus, it appears that teachers rated the reading achievement of behavior problems equally no matter whether they were boys or girls. However, they definitely rated these pupils lower in reading achievement than they did those rated high on classroom behavior. There was considerable although not unequivocal support for hypothesis number two.

4. There was small but repeated evidence of pupil behavior bias in assignment to reading group.

Evidence of bias was revealed slightly by multiple regression analysis and somewhat more by correlation coefficients. (This question did not lend itself to analysis via comparison of corresponding, proportional frequency distributions.) However, this evidence was consistently small indicating that not all teachers assigned pupils seen as discipline problems to lower reading groups. It is clear though that in assigning pupils to reading groups, teachers responded only slightly to pupil sex and definitely more to pupil behavior. Thus, it appears that teachers assigned pupils seen as behavior problems equally to reading groups no matter whether they were boys or girls. However, they definitely assigned pupils seen as behavior problems to lower reading groups than they did those rated high on classroom behavior. There was considerable although not unequivocal support for the second part of hypothesis two.

Several other conclusions of smaller scope and less certainty were also deemed sufficiently significant and defensible enough to be drawn. These seemed to lend themselves to being classified into two categories, sex bias and teacher judgment.

1. Sex bias of teachers.

- a. Such bias as was evident seemed not so much toward down-rating boys into the lower categories in reading achievement, reading group placement, and pupil behavior as merely not including them in the upper categories on both these criteria. Teachers seemed reluctant to place as many boys as girls in the highest category. This seems to indicate that teachers displayed only a minimal amount of sex bias, and that such bias as did exist wasn't a general, pervading phenomenon but rather a slight tendency to deny that boys could achieve or behave as well as do the highest achieving and/or behaving girls.



- b. Such bias as was evident seemed centered more in the upper grades (grades 4, 5, and 6) than in the primary grades (grades 1 and 2). This seemed observable in both teacher rating of pupil reading achievement and in assignment to reading group; however, it was not quite so evident in teacher rating of pupil behavior. If the elementary school is predominately a feminine institution, this tendency could easily have been predicted and readily accounted for by the increasing masculinity of boys as they grow older, thereby becoming less and less like both the female pupils and the female teachers. Thus, this finding is neither shocking nor unrealistic but rather in the direction indicated by previous studies reviewed in Chapter I.
2. Teacher judgment. Teachers were asked to judge pupils on two variables, reading achievement and classroom behavior, as well as to indicate their prior judgment as to which reading group a pupil should be assigned to. An examination of the correlation coefficients generated in this study raised some serious questions about the accuracy of these judgments.
- a. The correlation between teacher rating of pupil reading achievement and the results of standardized tests was only 0.54. It is obvious that teacher assessment of reading achievement is based on or includes components quite different from those included in standardized tests; they seem not to be measuring the same things. It is the researcher's speculation that it is the teacher's judgment that is more fallacious and variable and that the standardized test scores have more congruence with "reality" (the true level of pupil reading achievement).
  - b. The correlation between reading group placement and standardized test scores, 0.46, was even lower than that between teacher rating of reading achievement and standardized test scores reported above. This questionably low correlation indicates that teachers are not assigning pupils to reading groups in relation to their measured achievement level but rather are using or including other criteria. This lack of congruence between these two variables raises again the question of how accurate teacher judgment is.
  - c. The correlation between reading group placement and teacher rating of pupil reading achievement



was a startlingly high 0.71. Compared with the modest correlation of 0.46 reported in (b) above between reading group placement and standardized test scores indicates quite clearly that teachers tend to assign pupils to reading groups on the basis of intuition and subjective judgment rather than the results of standardized tests. This correlation is so high and the previous one so modest that it raises the suspicion that teachers are not consulting the results of standardized testing in forming judgments but rather are relying on their own subjective assessment. This raises some serious doubts in the researcher's mind whether the teachers in this sample understand the purposes and uses of their school-wide testing program.

#### Recommendations for Further Research

Even though the researcher has great confidence in the findings and the conclusions of this study, it should be stressed that the findings may not be generalizable to populations differing significantly in kind, composition, and geographic location from the sample population. Furthermore, this study was essentially an overview and the inherent nature of generality fails to reveal information about smaller constituent groups. In light of these two cautionary statements, the following recommendations for further research are made.

1. It seems reasonable to conclude that teachers who have taught for a period of time, possibly over three years, may have either overcome any sex or behavior bias they may have originally possessed or may have found positions where their biases did not cause them anxiety or frustration. If so, it would be informative to discover whether minimally-experienced teachers, less than three years experience, manifested more sex or behavior bias than their more experienced counterparts. It is recommended that a larger sample of teachers be drawn based on years of teaching experience to determine whether less-experienced teachers show more sex and behavior bias than do more-experienced one.
2. Individual elementary schools differ widely on the behavior displayed by the attending pupils. Opinion of numerous educators is that discipline is distinctly more of a problem in inner-city schools than in rural, small town, suburban, or middle-class residential schools. Perhaps teachers in these manifest greater sex and behavior biases than do teachers in other schools or in a system in general. It is recommended that another sample of teachers be drawn

based on location of school and type of pupils attending to determine whether inner-city teachers show more sex and behavior bias than do other teachers.

3. Furthermore, it is recommended in each of the above suggested studies that attention be paid to additional variables such as grade level, teacher sex, and possibly even level of teacher competency.

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## APPENDIX A

### Method of Selecting Respondents

# APPENDIX A

## SCHEME FOR DETERMINING SCHOOL AND GRADE LEVEL OF PARTICIPATING TEACHERS

School	Grades					
	2	3	4	5	6	
Avondale East	1					35
Avondale Southwest	36	2				
Avondale West		37	3			
Belvoir			38	4		
Bishop				39	5	
Central Park	6					40
Clay	41	7				
Crestview		42	8			
Gage			43	9		
Grant				44	10	
Highland Park Central	11					45
Highland Park North	46	12				
Highland Park South		47	13			
Judson			48	14		
LaFayette				49	15	
Linn	16					50
Lowman Hill		17				
Lundgren			18			
McCarter				19		
McClure					20	
McEachron	21					
Monroe		22				
Parkdale			23			
Polk				24		
Potwin					25	
Quincy	26	7				
Quinton Heights		27				
Randolph			28			
Rice				29		
Sheldon					30	
State Street	31					
Stout		32				
Sumner			33			
Whitson				34		

## APPENDIX B

### Data Collection Instruments

Dear Teachers:

The U.S. Office of Education has awarded me a grant to investigate some relationships between pupil reading achievement and classroom behavior. As one part of this study, 50 Topeka elementary teachers were selected at random and by chance by Miss Sylvia Nelson, elementary consultant, to furnish some information about pupils in their classrooms.

Teachers often are reluctant to participate in research studies for fear of being identified and having the information used to judge their teaching in some way. Special precautions will be taken to see that both the teachers and pupils will be anonymous. The principals will select by chance the teachers in each school to answer the questionnaire and neither I nor Miss Nelson will know who you are. Also, when you turn in the information, Miss Nelson will cut off the column of pupils' names and provide me only with the numerical information. We hope you see that we are interested only in the information you provide and not in who provides it.

Please read the following directions carefully and then FOLLOW THEM EXACTLY. (The study is based on the assumption that all teachers will respond as directed. If directions are not followed exactly, the results of the study will not be valid.)

1. Fill in the information requested at the top of the "Data Collection Sheet".
2. Enter the pupils' first name and last initial in column 1. (To assure absolute anonymity, Miss Nelson will cut off this column.)
3. Read the attached sheet entitled "Pupil Level of General Reading Achievement".
4. Rate each child in your class on his level of general reading achievement as per directions. (Column 3) Please use ink.
5. Read the attached sheet entitled "Instructional Grouping in the Classroom".
6. Fill in column 4 of the "Data Collection Sheet" as per directions. Please use ink.
7. Read the attached sheet entitled "Pupil Classroom Behavior".
8. Rate each pupil in your class on his behavior as per direction. (Column 5) Please use ink.

Please be accurate in recording information. Don't record the reading achievement for Johnny and the behavior for Susie on the same line!

Return the completed form to the building principal by 4 P.M., Friday.

I am most grateful for your cooperation. The results of this study will be supplied to the Topeka school system in September, 1969.

Gratefully,

Leo M. Schell, Ph.D.  
Assistant Professor



# DATA COLLECTION SHEET

(1) Teacher sex: F M  
(Circle one)

(2) Grade: 2 3 4 5 6  
(Circle one)

(3) Years of teaching experience: \_\_\_\_\_

(4) Teacher age: \_\_\_\_\_

Column 1

2

3

4

5

Pupil Initials	Pupil Sex (M or F)	General Reading Achievement	Reading Group	Pupil Behavior	
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					

## PUPIL LEVEL OF GENERAL

### READING ACHIEVEMENT

**DIRECTIONS:** Rate each of your pupil's level of general reading achievement according to the scale described below. Base your rating on how well the pupil is performing compared to his peers; do NOT rate him according to his potential.

Beside each numerical rating is a percentage and a verbal description. The percentage is an arbitrary, mythical figure based on the idea of a normal distribution. That is, if all elementary school teachers in the USA rated each child in their class, the results would approximate these suggested percentages. You are NOT bound to these percentages in any way! If your class has more than the normal proportion of above or below average pupils, do not hesitate to indicate this in your ratings. The percentages are to help you make decisions; they are merely guidelines, not rigid rules.

#### Numerical Rating Scale:

- 1 - Upper 10%; reads rapidly, fluently, and comprehends well; level of reading is far beyond the average child of the same chronological age.
- 2 - Next 20%; above average in level of general reading achievement compared to the average child of the same chronological age.
- 3 - Middle 40%; average in level of reading achievement compared to the average child of the same chronological age. (This group covers a wide range in achievement and there is quite a disparity between the highest and the lowest achiever in this group.)
- 4 - Next 20%; below average compared to the average child of the same chronological age.
- 5 - Lowest 10%; level of reading is far below that of the average child of the same chronological age; may have been referred for or receiving remedial help.

P.S. This rating need not coincide with the pupil's placement in groups for reading instruction (see next sheet, "Instructional Grouping in the Classroom").

## INSTRUCTIONAL GROUPING IN THE CLASSROOM

DIRECTIONS: For reading instruction, most teachers form somewhat homogeneous groups. Some teachers find that only two groups are needed, many three, and some four or more.

Write the appropriate numeral in column 4 to indicate the group (level) within the classroom in which each child is usually placed AT THE PRESENT TIME for reading instruction. For example, if you have only two groups, all children in the upper group will have a "1" recorded in column 4 and all children in the other group will have a "2" written after their initials in column 4. Or, should you have three groups, the pupils in the highest group will have a "1" in column 4, the pupils in the middle group a "2" in column 4, and the pupils in the lowest group a "3" in column 4. The same plan should be followed if you have four or more groups; merely add numerals for each succeeding lower group.

P.S.

This numbering system need not coincide with the pupil's level of general reading achievement (see preceding sheet, "Pupil Level of General Reading Achievement").

## PUPIL CLASSROOM BEHAVIOR

**DIRECTIONS:** Rate each of your pupil's classroom behavior according to the scale described below. Base your rating on how well the pupil behaves compared to other children now in the classroom.

Beside each numerical rating are some statements describing a child who might deserve each rating. These statements are suggestions only and will not apply to all children all the time.

You need NOT use all five categories. If your class has more than the usual number of well-behaved (or hard-to-discipline) pupils, don't hesitate to indicate this in your ratings.

### Numerical Rating Scale:

- 1 - Never a behavior problem; always cooperative and obedient; wants others to meet same standards.
- 2 - Respects regulations; works well with others; occasionally is non-cooperative, disobedient, or disruptive but these are exceptions rather than the rule; violations are neither serious nor flagrant in nature; above-average.
- 3 - Average in behavior; generally respectful, cooperative, and obedient although not consistent; feels guilty when reprimanded and wants to do better; occasionally may present a serious problem but this will be minor and brief.
- 4 - A definite behavior problem; repeatedly (not necessarily consistently) disrespectful, non-cooperative, disruptive, or disobedient; tries to exercise self control but is only partially successful; violations are occasionally serious and quite disruptive.
- 5 - Disruptive, unpredictable, and sometimes openly non-cooperative; may seem to lack knowledge of accepted group norms or even delight in flouting regulations; behavior is so deviant that child is sometimes referred to principal for correction.